



PowerEdge Boot Optimized Storage Solution (BOSS)

Tech Note by:

Jeff Armstrong

Tad Walsh

SUMMARY

Boot Optimized Storage Solution (BOSS) was developed in response to customer needs for a separate, cost-effective Hardware RAID (RAID1) solution for operating system drives. Customers wanted separate controllers for OS drives and data drives on their server platforms.

The BOSS solution provides this separate Hardware RAID functionality for the OS drives while also freeing up additional drive slots to be used for 'data set' devices.

BOSS utilizes one or two read-intensive (Boot Class) M.2 SATA Solid State Devices (SSDs) which can be used in pass-thru" or two devices in Hardware RAID 1 (mirroring).

Available on PowerEdge 14th-generation servers, BOSS is a robust, redundant, low-cost solution for boot optimization.

New with Dell EMC PowerEdge 14th-generation (14G) servers, the Boot Optimized Storage Solution (BOSS) comes in response to customer requests for a simpler, more economical way to segregate operating system and data on server-internal storage. Many customers, particularly those in the Hyper-Converged Infrastructure (HCI) arena and those implementing Software Defined Storage (SDS), prefer to separate their operating system drives from data drives, and require hardware RAID mirroring (RAID1) for their OS drives. The main motivation for this is to create a server configuration optimized for application data. Providing a separate, redundant disk solution for the operating system enables a more robust, optimized compute platform.

PowerEdge Engineering developed a simple, cost-effective way of meeting this customer need. The Boot Optimized Storage Solution uses one or two M.2 SATA devices instead of 2.5" SSD drives to house the OS, and utilizes a two-port SATA Hardware RAID controller chip to provide Hardware RAID 1 and Pass Through capabilities. The M.2 devices offer the same performance as 2.5" SSD drives, and by consolidating the SSDs and controller chip on a single PCIe adapter card, the solution frees up an additional drive slot for data needs.

BOSS is available with all PowerEdge 14G servers. Users of 14G servers wanting to continue to implement PERC RAID controllers and consume two drive slots can of course do so, but users implementing BOSS will find that it is a simpler, lower-cost solution performing the same function.

Table 1 below highlights key features of the BOSS:

Table 1: **BOSS key features**

- One or Two 80mm M.2 SATA devices
- M.2 Devices are Read Intensive 120GB/240GB
 - Same Cost & Performance as 2.5"
- Fixed function Hardware RAID 1 (mirroring) or Pass-through
- Single x2 PCIe Gen 2 host interface (x8 connector)
- Dual x1 SATA ports for device interfaces
- Presents single virtualized SATA device to the host
- Half-height / Half-length PCIe adapter module
- Managing BOSS is accomplished with standard, well-known management tools including OpenManage Systems Administrator (OMSA) and command line interface (CLI)

Managing BOSS

BOSS-S1 management is supported on PowerEdge 14G servers by both In Band and Out of Band utilities. It has enriched support from iDRAC as well as OpenManage systems management solutions, as shown in Table 2 below:

Table 2 : **BOSS-S1 System Management Features**

- Managing BOSS is accomplished with standard, well-known management tools including Unified Extensible Firmware Interface (UEFI) RAID Configuration Utility, OpenManage Systems Administrator (OMSA), Integrated Dell Remote Access Controller (iDRAC) and Command line interface (CLI)
- UEFI RAID Configuration Utility is the storage management application is integrated into the System BIOS (F2)
- Inventory and Monitoring Support for BOSS-S1 is provided by OpenManage Systems Administrator (OMSA) and Integrated Dell Remote Access Controller (iDRAC)
- Configuration support from DellEMC Lifecycle controller and iDRAC
- Command Line Interface (CLI) support for managing BOSS from Windows Server, Linux and VMware ESXi Operating Systems
- Out of Band Firmware Update support for BOSS-S1 using iDRAC and Lifecycle controller

For further information about BOSS, please see:

- Blog: [BOSS-S1 System Management Features](#)
- User Guide (PDF): BOSS-S1 [User Guide](#)
- Brief video: [BOSS Feature Overview](#)